

Water fluoridation questions and answers



October 2005

Queensland the Smart State



Queensland Government
Queensland Health

This booklet is intended as a resource to support health professionals and councils to advise the community. It is supported by the following web resources:

- Information Bulletin for community. Fluoridation of water supplies and your health. Queensland Health: Oral Health Unit, 2005
http://www.health.qld.gov.au/fluoride/fluoridation_health.pdf
- Queensland Health. Water fluoridation helps protect teeth throughout life
Queensland Health: Oral Health Unit, 2005
http://www.health.qld.gov.au/fluoride/fluoridation_teeth.pdf
- Queensland Health. Water fluoridation: information for health professionals. Queensland Health: Oral Health Unit, 2005
http://www.health.qld.gov.au/fluoride/health_professionals.pdf
- For more information please go to oral_health@health.qld.gov.au

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A General questions

A1 What is the Queensland Government doing about dental health?

The Government is committed to improving the oral health of Queenslanders. Tooth decay has a significant impact on health and wellbeing, and results in high personal and community costs. It is largely preventable. The Queensland Government tries to reduce tooth decay by:

- Improving access to dental care;
- Making healthy food choices the easy choice;
- Increasing awareness about the importance of tooth brushing, fluoride toothpaste and regular dental check-ups;
- Allocating funding to help councils introduce water fluoridation.

A2 If our community decides we want water fluoridation, who pays for it?

Under the current legislation local councils are responsible for the installation and management of water fluoridation plants in Queensland. The Queensland Government has offered local councils funding to cover the capital costs associated with the installation of water fluoridation plants for a five-year period from October 2005.

B Technical aspects

B1 What is fluoride?

Fluoride is a naturally occurring compound found in water, plants, rocks, soil, air and most foods. It helps protect teeth against decay. Water fluoridation is the most effective way for everybody to access the benefits of fluoride.¹

B2 How does fluoride work?

Tooth decay develops when acid destroys the outer surface of the tooth. The acid is produced from sugar by bacteria in the mouth. Fluoride makes teeth more acid resistant, and also helps repair damage before it becomes permanent¹. Frequent low levels of fluoride are best for this — fluoride in the water supply acts like a constant ‘repair kit’ for teeth.

B3 Does fluoride affect the taste or smell of water?

No, fluoride does not affect the taste or smell of water.

B4 What if I don't want chemicals in my water?

Water in its natural and treated form can contain many chemicals. Special water filters can remove chemicals from the water, but essential minerals will also be removed. Bottled water can also be purchased for drinking.

B5 Do water filters remove fluoride from the water?

Many home water filtering systems do not significantly alter the fluoride content of the water, although reverse osmosis filters do remove most of the fluoride.¹

B6 What forms of fluoride are added to the drinking water?

Sodium fluoride, sodium fluorosilicate and fluorosilicic acid are commonly used throughout Australia and the rest of the world. Their use is recommended by Australia's peak health body, the National Health and Medical Research Council (NHMRC).⁴ Only very small amounts are needed to reduce tooth decay.

B7 Is the fluoride used in water fluoridation a toxic poison?

No, water fluoridation is not toxic. Only very small amounts of fluoride are needed to reduce tooth decay. Just like salt, iron, chlorine, vitamins and many other substances, fluoride is very beneficial in small amounts, but can be harmful in large amounts. The national recommended level is about 1 mg/L, or one part of fluoride in a million parts of water.

Water fluoridation is a safe way to help protect teeth against decay, and is recommended by the world's leading health and scientific authorities. Water fluoridation does not cause cancer, bone fractures, birth defects or any other illness or condition. Dental fluorosis is the only side effect to which water fluoridation can contribute, and this can be minimised by careful use of fluoride toothpaste, and not using fluoride tablets unless specifically prescribed by a dentist (see section E).^{1, 5-9}

B8 What safeguards ensure that overdosing doesn't happen?

Fluoride is added to the water in very carefully controlled amounts. The fluoride levels are monitored every day.

B9 Does the fluoride used in drinking water come from pollution scrubbers?

A scrubber is simply a piece of equipment widely used in manufacturing to dissolve a gas in a liquid. When fluoride is extracted from rocks, a fluoride-containing gas is produced. Scrubbers convert this fluoride into a liquid or powder form that can be safely added to water supplies.

B10 Does fluoride come from the fertiliser industry?

Fluoride is found naturally in the environment in rocks, soil, air and water. Some rocks are rich sources of fluoride. These rocks are often also rich sources of phosphate, used in the production of phosphate fertilisers. When phosphate is removed from rock, an extra step can be added to collect the fluoride as well. This is an efficient use of a natural resource.

B11 Do the other substances present in fluoride compounds contaminate the drinking water?

The levels of contaminants associated with fluoride compounds are extremely low. The Australian Drinking Water Guidelines ensure that all water used for drinking meets extremely high standards of safety. All drinking water, whether fluoridated or not, must meet the same high standards.

B12 Does fluoridated water pollute the environment?

Fluoride is naturally found in the environment in water, soil, rocks and air. The amount of fluoride naturally found in rocks and soil is about 300 to 700 times higher than fluoridated water. Some water has naturally occurring fluoride in it already, and the small amounts added to water supplies will not harm the environment.⁹

B13 Is there a requirement for the fluoride that is added to community water supplies to be registered as a medicine?

In Australia, the Therapeutic Goods Administration (TGA) is responsible for regulating medicines to ensure their quality, safety and efficacy. The TGA does not require fluoride compounds to be registered as medicines if:

- they are used for the prevention of tooth decay; and
- are also not scheduled as a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons (Poisons Schedule).¹²

In the Poisons Schedule, fluoride preparations containing 15mg/L or less of fluoride do not need to be specially classified as drugs or poisons.¹³ This includes fluoride that is added to community drinking water supplies.

The compounds recommended by the NHMRC and used by water authorities throughout Australia are sodium fluoride, sodium fluorosilicate and fluorosilicic acid.⁴ To be acceptable to the NHMRC, any chemical added to drinking water must not be toxic when ingested at recommended levels.

In Queensland's fluoridated towns and cities, the fluoride levels are adjusted to a maximum of 0.9 parts per million (0.9 ppm), which is equivalent to 0.9 milligram of fluoride per litre of water (0.9mg/L).

C1 Does water fluoridation really prevent tooth decay?

Numerous studies and subsequent reviews have confirmed the effectiveness of water fluoridation in reducing tooth decay.^{1, 5, 6, 8, 9, 10, 14}

C2 Isn't toothpaste a more effective way to provide fluoride?

Brushing teeth with fluoride toothpaste is a good way to help prevent tooth decay. Even so, water fluoridation has been found to have an effect over and above that of fluoride toothpaste.^{6, 14} Fluoride at an optimal level in the water supply provides the ideal 'repair kit' for teeth, by providing small amounts of fluoride throughout the day.¹⁵

Maximal dental health benefits are obtained through a combination of water fluoridation, brushing with a fluoride toothpaste, healthy diet and regular dental check-ups.

C3 Are any diseases linked to a fluoride deficiency?

People who receive very little fluoride tend to suffer more tooth decay than people using fluoride toothpaste and drinking fluoridated water.^{1, 5, 6, 8, 9, 14}

C4 Isn't dental health better today because of factors other than water fluoridation?

Many factors, including the use of fluoride toothpaste, have contributed to the reduction in tooth decay over the past 25 years. But Queenslanders still suffer more tooth decay than residents of other States and Territories where water fluoridation is available. The effectiveness of water fluoridation in reducing tooth decay is well documented.^{1, 5, 6, 8, 9, 10, 14}

C5 Hasn't water fluoridation been ineffective at preventing early childhood tooth decay, a serious problem affecting children?

Early childhood tooth decay is most often caused by eating and drinking too many sugary foods. Water fluoridation reduces tooth decay, but cannot totally prevent decay. Breastfeeding is the preferred method of feeding for baby's health. If breastfeeding is not possible, bottlefeeding should always be done with adult supervision and the bottle should be taken away when the infant has had enough. The baby bottle should only be filled with breast milk, appropriate infant formula or boiled water (not fruit juice, soft drinks or cordial). A feeding cup should be introduced at the age of six months and the bottle should be discarded at about 12 months of age.¹⁵

D Benefits versus risks

D1 What are the benefits and side-effects of water fluoridation?

There are many benefits of water fluoridation:

- 1** It helps protect teeth against decay, and therefore reduces the consequences of decay including:
 - a) pain and suffering
 - b) effects on appearance, self-esteem and social interaction
 - c) effects on the ability to eat and chew
 - d) complications such as dental abscess formation, which may damage an adult tooth developing underneath if it occurs in a baby tooth
 - e) orthodontic treatment which may be required if teeth are lost too early as a result of decay
 - f) cost and inconvenience of treatment
 - g) general anaesthetics sometimes needed to treat severe decay
- 2** It helps protect teeth in both adults and children.
- 3** It provides extra protection against decay even if teeth are brushed with fluoridated toothpaste.
- 4** Everybody benefits, regardless of age, income or education.
- 5** People spend less time away from school or work with tooth pain due to decay.
- 6** Individuals and families save money on dental treatment.
- 7** The whole community saves money on dental treatment and less time away from school and work (about \$1 billion in Victoria alone over the past 25 years).

In contrast to the many benefits, dental fluorosis, or mottling of the teeth, is the only side-effect evident in fluoridated towns. However, dental fluorosis also occurs in non-fluoridated communities. The chance of developing dental fluorosis is reduced through careful use of fluoride toothpaste, and only using fluoride tablets if prescribed by a dental professional. See section E for more information.

E Dental fluorosis

E1 Does water fluoridation cause dental fluorosis?

Dental fluorosis, or mottling of the teeth, can occur if young children get too much fluoride when their adult teeth are forming. Points to note about dental fluorosis include:

- It usually appears as very fine pearly white lines or flecks on the teeth;
- Severe dental fluorosis is uncommon;
- It cannot develop after the teeth are fully formed;
- It occurs in areas with and without water fluoridation;

E2 Is dental fluorosis of concern in other fluoridated areas?

There is no evidence of significant fluorosis concern in other fluoridated areas in comparison to non-fluoridated areas. The degree of dental fluorosis in fluoridated Melbourne is within expected limits for a fluoridated community.¹⁸

The World Health Organization notes that a small proportion of the population in fluoridated areas will have dental fluorosis, most of which cannot be seen by the untrained eye. It also notes that the amount of dental fluorosis will increase where other sources of fluoride are available.¹⁷ Therefore, it is important to use fluoridated toothpaste carefully for children under six, and to only use fluoride tablets if prescribed by a dentist (see section E1).

E3 Are we monitoring for dental fluorosis in the future?

Yes. Dental fluorosis is included in the 2005 National Oral Health Survey.

E4 Can infant formula be reconstituted with fluoridated water or does this increase the risk of dental fluorosis?

Breastfeeding is recommended for all infants under 12 months of age as an 'unequalled way of providing ideal food for the healthy growth and development of infants'.^{19, 20} If an infant is not breastfed, infant formula can be safely reconstituted with fluoridated water providing the powder itself is not high in fluoride. In Australia, infant formula with a high fluoride content must carry a warning label about dental fluorosis.²¹

Food Standards Australia New Zealand (formerly ANZFA) is an independent statutory authority that develops the food standards code that relates to infant formula products, and clause 19 refers specifically to dental fluorosis. It states that infant formula containing more than 17 µg of fluoride per 100 kJ powder prior to reconstitution must include a warning about dental fluorosis on the label.²¹

Most of the infant formulas available in Australia now have very low levels of fluoride and it is now common practice for fluoridated water to be used to reconstitute infant formula.²²

F Side effects other than dental fluorosis

F1 What happens to people who are allergic to fluoride?

It is questionable whether true allergy to fluoride even exists. The weight of scientific evidence indicates that fluoride is extremely unlikely to cause an allergic reaction.²⁴ Furthermore, given that fluoride is present in all common foods, people proposing that they have an allergic reaction are essentially claiming an effect from an increase in the amount of fluoride they consume, not its presence versus its absence.⁵

F2 Can water fluoridation cause any side-effects other than dental fluorosis? What about cancer, bone fractures, Down syndrome, behavioural disturbances, thyroid problems or any other serious effects?

‘Since 1950, opponents of water fluoridation have claimed it increased the risk for cancer, Down syndrome, heart disease, osteoporosis and bone fracture, acquired immunodeficiency syndrome, low intelligence, Alzheimer disease, allergic reactions, and other health conditions. The safety and effectiveness of water fluoridation have been re-evaluated frequently, and no credible evidence supports an association between fluoridation and any of these conditions.’²⁵

There are many studies about water fluoridation. Any scientific study must be carefully reviewed to see if the results are likely to be accurate. A review is one way to consider the overall weight of evidence. One of the best reviews (National Health Service Centre for Reviews and Dissemination, 2000) looked at 214 of the highest quality studies to assess the benefits and possible side-effects of water fluoridation. It found that water fluoridation protects against tooth decay without causing any unwanted effects apart from occasional dental fluorosis (see section E). Other reviews also support the safety of water fluoridation.^{1, 5, 6, 8, 9, 10, 14}

F3 Does fluoride affect the pineal gland and lead to early onset of puberty?

Available research into fluoride and the pineal gland has not demonstrated an association with long-term fluoride exposures, nor has it shown any clinical significance.²⁶

F4 Does fluoride accumulate in the body after drinking fluoridated water?

After drinking fluoridated water, the fluoride is absorbed into the bloodstream through the stomach and intestine. About 50 per cent of the fluoride is subsequently absorbed mostly by the teeth and bones where it becomes incorporated into the structure.²⁷ If this occurs while the teeth are developing — from birth to approximately six to eight years of age — a more acid-resistant tooth surface is created which helps to protect teeth against decay throughout life.¹ The remaining fluoride is filtered out by the kidneys and excreted in urine.²⁷

F5 Is it safe to drink fluoridated water while pregnant or breastfeeding?

Yes.

G Costs

G1 How can water fluoridation be cost-effective when only a small proportion of the water is used for drinking?

Fluoridating water is a cost-effective intervention, when compared to the cost that tooth decay causes. The World Health Organization concludes that water fluoridation is a safe and cost-effective way to prevent tooth decay.¹⁷ The first 25 years of water fluoridation in Melbourne saved the state about \$1 billion in dental costs, lost productivity, and saved leisure time.¹⁶

G2 Is water fluoridation just done to save money on dental treatment, without any consideration for the wellbeing of people?

Like other public health measures, water fluoridation improves the health and wellbeing of the community. People of all ages benefit by having less tooth decay and subsequent complications. This reduces pain and suffering, and results in less time spent away from school and work. It also saves money for individuals, families and the community.^{1, 6, 32-34}

G3 Why isn't money directed toward addressing causes of poor dental health such as diet and oral hygiene?

Tooth decay has a significant impact on health and wellbeing, and results in high personal and community costs. It is largely preventable, and therefore a high priority for oral health promotion within Queensland. Water fluoridation is one of the many ways to prevent tooth decay. Other ways the Queensland

Government is addressing poor dental health include:

- Improving access to dental care;
- Promoting healthy food in school canteens;
- Promoting fruit and vegetable consumption;
- Increasing awareness about the importance of tooth brushing, appropriate use of fluoridated toothpaste and regular dental check-ups.

While a broad approach is being maintained, water fluoridation is the most effective and fair way to allow everybody in the community to benefit from fluoride.^{15, 35, 36}

G4 Doesn't water fluoridation impose costs upon people who need to avoid fluoride?

Given the enormous benefits and safety of water fluoridation, no-one needs to avoid fluoridated water and over 60% of Queenslanders indicated their preference for drinking fluoridated water in a recent household survey.³⁷ However, some people may choose to drink non-fluoridated water. A reverse osmosis water filter removes most of the fluoride;¹ and bottled water and tank water are usually low in fluoride. The small minority of people who choose not to drink fluoridated water should be advised to take particularly good care of their teeth in other ways. People who prefer not to drink fluoride in the water should be aware that even if their town does not have a water fluoridation program, some level of fluoride is already naturally present in the water supply.³⁸

G5 If water fluoridation is effective, why are we still training so many dentists?

Water fluoridation helps protect teeth against decay.⁶ No single measure can fully protect against tooth decay, so even if the water is fluoridated people still need to look after teeth through regular brushing, appropriate use of fluoridated toothpaste, healthy diet and regular dental check-ups. Also, there are many reasons other than tooth decay why people need to see a dental professional including routine check-ups, gum disease and treatment of trauma. Furthermore, older people are retaining more teeth than in previous decades, and dental professionals are required to help care for these teeth.³⁹

H1 Is it fair to make everybody drink fluoridated water? Why don't people who want fluoride just take fluoride tablets?

One of the great advantages of water fluoridation is that it allows everybody to benefit from the protective effect of fluoride, without individuals having to make a conscious effort. It benefits people of all ages, regardless of education, income or access to dental care.²⁵ Even people who use fluoridated toothpaste still benefit from water fluoridation.⁶

Fluoride tablets do not provide the same benefit as water fluoridation for several reasons: ^{9, 17, 40}

- 1 They are most likely to be used by the people who need them least — children with good oral hygiene and healthy diets;
- 2 People who brush teeth regularly with fluoridated toothpaste receive little (if any) additional benefit from fluoride tablets;
- 3 People may not remember to take them¹, or may take too many;
- 4 They increase the risk of dental fluorosis (mottled teeth), without clear benefits. 'Animal experiments have shown that fluoride given once a day is more likely to cause fluorosis than the same amount of fluoride given intermittently throughout the day, as occurs with fluoridated water.'¹⁷

The best way to care for your teeth is with a combination of water fluoridation, regular tooth brushing, appropriate use of fluoride toothpaste, healthy diet and regular dental check-ups.

H2 Is water fluoridation unethical mass medication and a denial of basic human rights and freedoms?

'Drinking fluoride-free water is not a basic human right but a question of individual preference. In a society where people come together for mutual benefit, it is a question of balancing such personal preferences against the common good arising from the lower levels of tooth decay which fluoridation brings.'⁴¹ Most health professionals have regarded the benefits of water fluoridation in terms of beneficence (doing good) and justice (equity), as outweighing the relatively minor reduction in individual autonomy for some and the low risk of adverse effects.¹⁶

'Fluoridation is endorsed and supported by the World Health Organization and has the support of the leading medical authorities in Australia including the Australian Medical Association, the Australian College of General Practitioners and the National Health and Medical Research Council.'⁴¹

‘In considering the ethics of fluoridation... we should ask not are we entitled to impose fluoridation on unwilling people, but are the unwilling people entitled to impose the risks, damage and costs of failure to fluoridate on the community at large.’ Professor John Harris, Centre for Social Ethics and Policy, University of Manchester, 1998. ⁴²

H3 Is water fluoridation mass medication?

Water fluoridation is not mass medication. Fluoridation is simply the adjustment of the level of fluoride in the water to give a major public health benefit. It can be compared, in a public health sense, to chlorination of water supplies to ensure drinking water quality, universal immunisation to prevent the transmission of communicable diseases, the addition of vitamin D to margarine for the maintenance of healthy bones, and the addition of folate to cereals to reduce birth defects.

/ International issues

I1 Has water fluoridation been banned in Europe?

No country has banned water fluoridation.⁴³ Because of practical difficulties with water supplies, many countries add fluoride to salt instead (which is then used in numerous products such as bread), to ensure that the community can still benefit from fluoride.⁴³

Worldwide, around 400 million people benefit from a fluoridated water supply.¹⁰

I2 Why was water fluoridation stopped in Basle, Switzerland?

Water fluoridation was introduced to the Swiss Canton of Basle in 1962 and was successfully maintained for 41 years. It was eventually ceased in view of widespread salt fluoridation in Switzerland.

Having fluoridated salt and fluoridated water in different parts of Switzerland was not seen as a problem until new federal laws were passed in 1995 which removed the restriction on the sale of fluoridated salt in the Canton of Basle. This meant that residents of Basle were then receiving fluoride from both salt and water, and it was decided to stop the water fluoridation program despite its many advantages.^{44, 45}

J References

- 1 Ahokas J, Demos L, Donohue D, Killalea S, McNeil J, Rix C. Review of water fluoridation and fluoride intake from discretionary fluoride supplements: review for NHMRC. Melbourne: Royal Melbourne Institute of Technology and Monash University; 1999. Available at <http://www.nhmrc.gov.au/advice/pdfcover/fluorcov.htm>.
- 2 World Health Organization. World water day 2001: oral health. 2002.; Available from http://www.who.int/water_sanitation_health/oralhealth/en/print.html (accessed 2004).
- 3 Department of Human Services Victoria. Your private drinking water supply. Melbourne: Department of Human Services Victoria; Feb 2000.
- 4 National Health and Medical Research Council. Chemicals used for treatment of drinking water supplies (1989). Available at <http://www.health.gov.au/nhmrc/publications/pdf/eh19b.pdf>.
- 5 National Health and Medical Research Council. The effectiveness of water fluoridation. Canberra: National Health and Medical Research Council; 1991.
- 6 National Health Service Centre for Reviews and Dissemination. A systematic review of public water fluoridation. York: University of York; 2000.
- 7 Committee of Inquiry into the Fluoridation of Victorian Water Supplies 1979-80. Report of the committee of inquiry into the fluoridation of Victorian water supplies 1979-80. Melbourne; 1980.
- 8 Government of Ireland. Forum on fluoridation. Dublin: Government of Ireland; 2002.
- 9 Public Health Commission Rangapu Hauora Tumataniui. Water fluoridation in New Zealand: analysis and monitoring report. Wellington: Public Health Commission Rangapu Hauora Tumataniui; 1994.
- 10 The British Fluoridation Society, The UK Public Health Association, The British Dental Association and The Faculty of Public Health. One in a Million, The Facts about water fluoridation 2nd Edition. 2004.
- 11 National Health and Medical Research Council/ Agriculture and Resource Management Council of Australia and New Zealand. National water quality management strategy: Australian drinking water guidelines. Australia: National Health and Medical Research Council/Agriculture and Resource Management Council of Australia and New Zealand; 1996. Available at <http://www.health.gov.au/nhmrc/publications/pdf/eh19.pdf>.
- 12 Commonwealth of Australia. Therapeutic Goods (Excluded Goods) Order. Therapeutic Goods Act 1989 2004.
- 13 Commonwealth of Australia. Standard for the Uniform Scheduling of Drugs and Poisons. 2003; No. 18, Schedule 2, page 45.
- 14 Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control dental caries in the United States. Morbidity and Mortality Weekly Report 2001;50(RR-14).
- 15 Department of Human Services Victoria. Oral health guidelines for Victorians. Melbourne: Department of Human Services Victoria; 2003.

- 16 Department of Human Services Victoria. Water fluoridation: information for health professionals. Melbourne: Victorian State Government; 2004.
- 17 World Health Organization Expert Committee on Oral Health Status and Fluoride Use. Fluorides and oral health: report of a WHO expert committee on oral health status and fluoride use. Geneva: World Health Organization; 1994.
- 18 Evans W, Morgan M, Conn J. Dental fluorosis prevalence in Melbourne 12-year-olds is within expected limits. Presented at the IADR ANZ Division 38th Annual Scientific Meeting: Brisbane 27-29 September 1998.
- 19 World Health Organization website http://www.who.int/child-adolescent-health/NUTRITION/infant_exclusive.htm 2000-2004 (accessed May 2004).
- 20 National Health and Medical Research Council. Dietary guidelines for children and adolescents in Australia incorporating the infant feeding guidelines for health workers. Canberra: Commonwealth of Australia; 2003. Available at www.nhmrc.gov.au/publications/pdf/n34.pdf.
- 21 Food Standards Australia New Zealand. Australia New Zealand Food Standards Code. Canberra: Commonwealth of Australia; 2004. Available at www.foodstandards.gov.au/foodstandardscode/
- 22 Australia New Zealand Food Authority. Development of joint Australia New Zealand Food Standards as part of the process of review of the Food Standards Code. Infant formula. Preliminary inquiry report. Canberra: Australia New Zealand Food Authority; 1999.
- 23 Silva M, Reynolds EC. Fluoride content of infant formulae in Australia. *Australian Dental Journal* 1996;41(1):37-42.
- 24 National Research Council Subcommittee on Health Effects of Ingested Fluoride. Health effects of ingested fluoride. Washington DC: National Research Council; 1993.
- 25 Centers for Disease Control and Prevention. Achievements in public health, 1990-1999: fluoridation of drinking water to prevent dental caries. *Morbidity and Mortality Weekly Report* 1999;48(41):933-940.
- 26 Luke J. Fluoride deposition in the aged human pineal gland. *Caries Research* 2001;35:125-128.
- 27 Sinclair MI, Kazda H, Cicuttini FM, Fairley CK. Public Health Effects of Water Fluoridation. Melbourne: Department of Epidemiology and Preventive Medicine, Monash University & Cooperative Research Centre for Water Quality and Treatment; 1998.
- 28 World Health Organization International Programme on Chemical Safety. Environmental health criteria 227: fluorides. Geneva: World Health Organization; 2002.
- 29 Medical Research Council Working Group. Water fluoridation and health. United Kingdom: Medical Research Council; 2002.
- 30 US Department of Health & Human Services. Fluorides, Hydrogen Fluoride and Fluorine. 2003 [accessed January 2005]; Available from: <http://www.atsdr.cdc.gov/toxprofiles/tp11.html>
- 31 Royal Children's Hospital Melbourne. Dietary Guidelines for Children and Adolescents. 2004 November 3 [cited 2005 January 24]; Available from: http://www.rch.org.au/nutrition/health-info.cfm?doc_id=2899

- 32 Department of Human Services Victoria. Impact analysis of water fluoridation. Prepared by Jaguar Consulting. Melbourne: Department of Human Services Victoria; May 2003 (unpublished).
- 33 Griffin SO, Jones K, Tomar SL. An economic evaluation of community water fluoridation. *Journal of Public Health Dentistry* 2001;61(2):78-86.
- 34 Wright JC, Bates MN, Cutress T, Lee M. The cost effectiveness of fluoridating water supplies in New Zealand. *Australian and New Zealand Journal of Public Health* 2001;25(2):170-178.
- 35 Department of Human Services Victoria. Evidence-based health promotion resources for planning: no. 1--oral health. Melbourne: Department of Human Services Victoria; Jan 2000.
- 36 Department of Human Services Victoria. Promoting oral health 2000-2004: strategic directions and framework for action. Melbourne: Victorian State Government; 1999.
- 37 Queensland Government Household Survey 2004.
- 38 Department of Human Services Victoria. Fluoridation: a guide to fluoride levels in water supplied to Victorian towns and cities. Melbourne: Department of Human Services Victoria; 2002.
- 39 Australian Institute of Health and Welfare. The Adelaide dental study of nursing homes (fact sheet): Australian Institute of Health and Welfare; 2001. Available at http://www.adelaide.edu.au/spdent/dsru/nursinghomes_frame.html.
- 40 Riordan P J. Fluoride supplements for young children: an analysis of the literature focusing on benefits and risks. *Community Dentistry and Oral Epidemiology* 1999;27:72-83.
- 41 Australian Dental Association Victoria. Celebrating 25 years: fluoridation of Melbourne water 1977-2002. Melbourne: Australian Dental Association Victoria; 2002.
- 42 British Fluoridation Society. [cited 2003 Sept]; Available from: www.bfs.com
- 43 American Dental Association. Fluoridation facts. 1999. Available at <http://www.ada.org/public/topics/fluoride/facts>
- 44 Meyer J, Marthaler T, Burgi H. The change from water to salt as the main vehicle for communitywide fluoride exposure in Basle, Switzerland. *Community Dent Oral Epidemiol* 2003;31:401-2.
- 45 MarthalerT, Meyer J. Drinking water fluoridation in Basle 1962-2003. *Community Dental Health* 2004;21:1-3.

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October 2005

